

CLASS EXERCISES

For each linear system of equations, predict whether the lines will intersect, coincide, or be parallel.

1. $\begin{cases} y = x + 2 \\ y = -2x + 3 \end{cases}$

2. $\begin{cases} y = -3x + 3 \\ y = 2x - 7 \end{cases}$

3. $\begin{cases} y = -4x + 9 \\ y = 3x - 5 \end{cases}$

4. $\begin{cases} y = x - 2 \\ y = -2x + 7 \end{cases}$

5. $\begin{cases} y = \frac{3}{4}x - 8 \\ y = \frac{3}{4}x + 8 \end{cases}$

6. $\begin{cases} y = \frac{1}{3}x + 3 \\ y = \frac{1}{3}x - 3 \end{cases}$

7. $\begin{cases} x - 3y = -6 \\ y = -2x + 6 \end{cases}$

8. $\begin{cases} 2x - 4y = 4 \\ -x + 2y - 2 = 0 \end{cases}$

9. $\begin{cases} 5x - 7y = -7 \\ y = \frac{5}{7}x + 1 \end{cases}$

PRACTICE EXERCISES



Use technology where appropriate.

Solve each linear system graphically. Determine whether the system is consistent and independent, inconsistent, or consistent and dependent.

1. $\begin{cases} x + y = 2 \\ y = 2x - 1 \end{cases}$

2. $\begin{cases} x + y = 3 \\ y = 3x - 1 \end{cases}$

3. $\begin{cases} 3x + y = 5 \\ x - y = 7 \end{cases}$

4. $\begin{cases} 3y - 4x = 0 \\ y - x = 1 \end{cases}$

5. $\begin{cases} 2x + 4y = 12 \\ x + y = 2 \end{cases}$

6. $\begin{cases} 2x - 2y = 4 \\ y - x = 6 \end{cases}$

7. $\begin{cases} 2x + y = 5 \\ y - x = -1 \end{cases}$

8. $\begin{cases} x + y = 3 \\ 2x + y = 10 \end{cases}$

9. $\begin{cases} x + 3y = 6 \\ -6y - 2x + 12 = 0 \end{cases}$

10. $\begin{cases} 2x - y = 4 \\ 2y - 4x + 8 = 0 \end{cases}$

11. $\begin{cases} -2x = y - 1 \\ y + x = 4 \end{cases}$

12. $\begin{cases} y = 1 - x \\ 2x + y = 9 \end{cases}$

13. $\begin{cases} 3x - 4y = 13 \\ 2x + y = 5 \end{cases}$

14. $\begin{cases} 2x - y = 0 \\ 2x + 4y = -10 \end{cases}$

15. $\begin{cases} 2x = y - 7 \\ 4x - 2y - 14 = 0 \end{cases}$

16. $\begin{cases} 3y = 1 - 4x \\ 8x + 6y - 12 = 0 \end{cases}$

17. $\begin{cases} y = 2 \\ y - 4 = x \end{cases}$

18. $\begin{cases} y = x \\ y - 7x = 0 \end{cases}$

19. $\begin{cases} y = 3 \\ 7x = 5y - 1 \end{cases}$

20. $\begin{cases} x = 2 \\ 2y = 4x + 2 \end{cases}$

21. $\begin{cases} 4y - 2x = 6 \\ 8y = 4x - 12 \end{cases}$

22. $\begin{cases} x - y = 1 \\ -7x + 7y = -7 \end{cases}$

23. $\begin{cases} 2y = -3x \\ 2y - 3x = 0 \end{cases}$

24. $\begin{cases} x - 2y + 1 = 0 \\ 2x + 4y - 6 = 0 \end{cases}$

25. $\begin{cases} x = 2 \\ y = 3 \end{cases}$

26. $\begin{cases} x = 4 \\ y = -7 \end{cases}$

27. $\begin{cases} y - x = 0 \\ y = -x \end{cases}$

28. $\begin{cases} 2y - x = 0 \\ \frac{1}{2}x - y = 0 \end{cases}$

29. $\begin{cases} 0.2x + 0.5y = 0.1 \\ 0.4x - 0.2y = -1 \end{cases}$

30. $\begin{cases} 0.3x - 0.2y = 1.1 \\ 0.1x - 0.4y = 0.7 \end{cases}$

Without graphing, determine whether each linear system is consistent and independent, inconsistent, or consistent and dependent. Check by graphing.

31. $\begin{cases} 2x - 3y = 4 \\ 3x - 4y = 7 \end{cases}$

32. $\begin{cases} 2x + 3y = -5 \\ x - 2y = 7 \end{cases}$

33. $\begin{cases} 3x - 2y = 8 \\ y = \frac{6x - 5}{4} \end{cases}$

34. $\begin{cases} 3x = -5y + 4 \\ y = \frac{-3x + 6}{5} \end{cases}$

35. $\begin{cases} \frac{2}{3} = \frac{x - y}{5} \\ \frac{1}{2} = \frac{2x + y}{4} \end{cases}$

36. $\begin{cases} \frac{3}{5} = \frac{x + 2y}{2} \\ \frac{4y + 2x}{4} = \frac{6}{10} \end{cases}$

37. Find and graph two linear equations that form a consistent, dependent system.

38. Is it possible to have an inconsistent linear system in which both lines have the same y-intercept? Explain.